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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/693,238

10/23/2003

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EXAMINER

SALL, EL HADJI MALICK

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/693,238	<b>Applicant(s)</b> CHEN ET AL.	
	<b>Examiner</b> EL HADJI SALL	<b>Art Unit</b> 2457	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13, 15 and 17-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15 and 17-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

***DETAILED ACTION***

1. This action is responsive to request for continued examination filed on November 23, 2009. Claims 1, 3, 17, 19, 29-31 and 37 are amended. Claims 14 and 16 are canceled. Claims 38 and 39 are added. Claims 1-13, 15 and 17-39 are pending. Claims 1-13, 15 and 17-39 represent method and systems for dynamically reconfigurable load balancing.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1-13, 15 and 17-35 and 37-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheno U.S. 20040208120 in view of Jacobs et al. U.S. 6,785,769.

Sheno teaches the invention substantially as claimed including multiple transmission bandwidth streams with differentiated quality of service (see abstract).

As to claims 1, 17, 29-31 and 37, Sheno teaches a method, an apparatus, an article of manufacture and a system for serving data to a plurality of clients in a client-server environment, comprising the steps of:

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assigning individual clients to one of a plurality of quality-of-service classes (paragraph [0089], Shenoï discloses assigning quality of service classes to different PVCs (i.e. "assigning QoS classes to clients"); and

satisfying requests so that a client belonging to a high quality-of-service class is given preferential access to data versions which require higher overheads to serve while a client belonging to a low quality-o-service class receives a data version which requires lower overhead to serve (paragraph [0117], Shenoï discloses assigning priority levels and "high priority" packets are given preferential treatment).

Shenoï fails to teach explicitly generating a plurality of versions of data in which at least two versions have different overheads associated therewith, the overhead of a given version of the given data comprising a quantity of processing resources required to serve the given version of the given data.

However, Jacobs teaches multi-version data caching. Jacobs teaches providing a plurality of versions of given data (multiple versions of data) in which at least two versions of the given data have different overheads (e.g., web page, portion of a web page, data table, data object ) (see abstract) associated therewith, the overhead of a given version of the given data comprising a quantity of processing resources required to serve the given version of the given data (i.e. "identified data item") (column 1, line 47 to column 2, line 2, Jacobs discloses multiple versions of data with different overhead, and if the lookup is successful, the data item is identified, retrieved from cache and served to the client).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shenoi in view of Jacobs to provide generating a plurality of versions of data in which at least two versions have different overheads associated therewith, the overhead of a given version of the given data comprising a quantity of processing resources required to serve the given version of the given data in order to provide a suitable interface, allowing an administrator to specify a data item or a group of data items (paragraph [0022] of Jacobs).

As to claims 2 and 18, Shenoi teaches the method and the apparatus of claims 1 and 17, wherein the overhead to serve a version is correlated with a quality of the version (paragraph [0044]).

As to claims 3 and 19, although Shenoi teaches substantial features of the claimed invention including the method and the apparatus of claims 2 and 18 including a client belonging to the high quality-of-service class is given preferential access (paragraph [0117]).

Shenoi fails to teach explicitly the multiple versions comprise images of different resolutions.

However, Jacobs teaches the multiple versions comprise images of different resolutions (column 1, line 65 to column 2, line 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shenoi in view of Jacobs to provide the plurality of

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versions comprise images of different resolutions and clients belonging to the high quality-of-service class are given preferential access to higher resolution images while a client belonging to the low quality-of- service class receives a lower resolution image in order to provide display having suitable image quality for improving the effectiveness of screening and diagnosis.

As to claims 4 and 20, Shenoi teaches the method of claims 2 and 18, wherein the quality of a version is correlated with a processing time required to create the version (paragraph [0022]).

As to claims 5 and 21, Shenoi teaches the method of claims 1 and 17, wherein the overhead to serve a version is correlated with how current the version is (paragraph [0106]).

As to claims 6 and 22, Shenoi teaches the method and the apparatus of claims 1 and 17, further comprising the step of: in response to a system load exceeding a threshold, satisfying a higher percentage of requests from clients belonging to a lower quality-of-service class with a version requiring lower overhead to serve (paragraph [0093]).

As to claims 7 and 23, Shenoi teaches the method and the apparatus of claims 1 and 17, wherein the server comprises multiple nodes and different nodes provide data

versions requiring different overheads to serve (paragraph [0073]).

As to claims 8, 9, 10, 11, 24, 25, 26 and 27, Shenoi teaches the method and the apparatus of claims 1, 8, 17 and 24, further comprising the step of implementing a quality-of-service policy that specifies at least one of content quality and latency (abstract), wherein one or more clients belonging to a premium service class are served with high content quality and low latency, wherein one or more clients belonging to a medium service class are served with one of high content quality and low latency, and wherein one or more clients belonging to a best-effort service class are served with unspecified content quality and latency (paragraphs [89-92]).

As to claims 12 and 28, Shenoi teaches the method of claims 1 and 17, wherein a client request is routed using at least one of an identity of the client, a quality of content, a load on at least one server, a data distribution on at least one server, and a capacity of at least one server (paragraph [0028]).

As to claim 13, Shenoi teaches the method of claims 1 and 13, wherein a client is assigned to a quality-of-service class by program logic that is externalized from the server (paragraph [0035]).

As to claim 15, Shenoi teaches the method of claims 1 and 15, further comprising the step of satisfying requests using a policy determined by program logic that is

externalized from the server (paragraphs [0035] and [0089]).

As to claim 32, Shenoi teaches the method of claim 31, wherein the data serving service comprises a quality-of-service policy specification (abstract).

As to claim 33, Shenoi teaches the method of claim 32, wherein the quality-of-service policy specification comprises: a plurality of subscriptions, each subscription being specified by content quality and service latency, wherein a limited premium service subscription is served with high content quality in low service latency, a medium service subscription is served with a high content quality or a low service latency, and an unlimited best-effort service subscription is served with unspecified content quality and latency (abstract; paragraph [0007]).

As to claims 34 and 35, Shenoi teaches the of claims 31 and 34, wherein the service provider modifies data content and how the data content is served to clients in response to one or more changing conditions (paragraph [0030]).

As to claims 38-39, Shenoi teaches the system of claims 30 and 37.

Jacobs fails to teach explicitly the at least one back-end server comprises: at least a first back-end server for generating a first version of the given object, and at least a second back-end server for generating a second version of the given object, wherein the first and second versions of the given object have different overheads



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associated therewith, wherein the one version of the given data is served by one back-end server while the other version of the given data is served by another back-end server.

However, Jacobs teaches the at least one back-end server comprises: at least a first back-end server (i.e. web server) for generating a first version of the given object, and at least a second back-end server (data server) for generating a second version of the given object, wherein the first and second versions of the given object have different overheads (web page, portion of web page, data table, data object) associated therewith (abstract), wherein the one version of the given data is served by one back-end server while the other version of the given data is served by another back-end server (column 1, line 47 to column 2, line 2, Jacobs discloses multiple versions of data with different overhead, and if the lookup is successful, the data item is identified (i.e. “the given data”), retrieved from cache and served to the client).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Sheno in view of Jacobs to provide the at least one back-end server comprises: at least a first back-end server for generating a first version of the given object, and at least a second back-end server for generating a second version of the given object, wherein the first and second versions of the given object have different overheads associated therewith, wherein the one version of the given data is served by one back-end server while the other version of the given data is served by another back-end server in order to provide a cache system, therefore allowing a request for a data item is received at the cache (column 1, lines 36-40 of

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Jacobs).

4. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shenoi et al. U.S. 20040208120 in view of Jacobs et al. U.S. 6,785,769, further in view of Huff U.S. 20040003080.

Shenoi teaches the invention substantially as claimed including multiple transmission bandwidth streams with differentiated quality of service (see abstract).

As to claim 36, Shenoi and Jacobs teach the method of claim 31.

Shenoi fails to teach explicitly the step of assigning individual clients to one of a plurality of quality-of-service classes is based on a client payment.

However, Huff teaches method and system for managing quality of service in a network. Huff teaches the step of assigning individual clients to one of a plurality of quality-of-service classes is based on a client payment (paragraph [0012]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Shenoi and Jacobs in view of Huff to provide the step of assigning individual clients to one of a plurality of quality-of-service classes is based on a client payment. One would be motivated to do so to allow identifying relative priorities of the clients (abstract).

### ***Response to Arguments***

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Applicant's arguments with respect to claims 1-13, 15 and 17-39 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to El Hadji M Sall whose telephone number is 571-272-4010. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 571-272-4001. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/El Hadji M Sall/

Examiner, Art Unit 2457

/ARIO ETIENNE/

Supervisory Patent Examiner, Art Unit 2457